Preparation Guide for the Candidate Physical Ability Test

City of Franklin, Division of Fire & EMS
45 East 4th Street, Franklin, Ohio 45005
937-746-4542

License #000080

Appendix 3-1

CPAT -- Candidate Preparation Guide

Preparation Guide for the Candidate Physical Ability Test

The job of a fire fighter is one of the most physically demanding jobs in North America. It requires high levels of cardiopulmonary endurance, muscular strength and muscular endurance. The Candidate Physical Ability Test consists of eight critical physical tasks that simulate actual job duties on the fireground. This test is physically demanding and requires that you be physically fit to be successful. This guide was developed to assist you with physically preparing yourself for the test.

What is physical fitness in the Fire Service?

Physical fitness is the ability to perform physical activities, such as job tasks, with enough reserve for emergency situations and to enjoy normal activities when off duty.

What are the major areas of fitness?

The major areas of physical fitness include:

- flexibility
- cardiopulmonary endurance
- muscular strength
- muscular endurance

Body composition is also considered an area of physical fitness. It should be noted that excess body fat increases the workload placed upon the body and decreases the body's ability to dissipate heat.

A proper physical fitness program should be specific for the job of a fire fighter. It should include all of the major areas of physical fitness mentioned above and be a total body program. Although this is best accomplished at a gym with an array of equipment, this guide also includes exercises that require little or no equipment.

Hydration

Proper hydration is critical. All candidates should drink water before exercise, during exercise and after exercise. Additionally, you should drink at least one liter of water one hour before your CPAT.

Warm-up & Flexibility

A warm-up serves several functions, including:

- increased blood flow to working muscles and joints
- decreased likelihood of injury
- decrease in pre-event tension
- possible improved performance
- improved flexibility

A proper warm-up should begin with a few of minutes of the same type of activity you are about to do at a very light exertion level. For example, if you are preparing to go running you should run in place or for a short distance at a very easy pace.

The next step is to stretch to improve flexibility and further your warm-up. There are two phases of stretching. The first phase is the easy stretch. In this phase, you should hold the stretch for 10 seconds in a range of motion that produces only mild tension. This prepares you for the second phase, the developmental stretch. In this phase, you should move slightly farther to the point where you feel a little more tension. This should be held for another 10 seconds.

Flexibility

When stretching follow these basic rules:

- Stretch slowly
- No bouncing
- No pain
- Stretching is not competitive
- Breathe slowly to help you relax
- Stretching should feel good

1. Knee to Chest

Glutes, Low Back, Hamstrings, Quadriceps

- Lay flat on back with knees bent.
- Grab under right thigh and pull knee toward chest until you feel mild tension.
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Repeat with other leg.
- Repeat sequence 2 or 3 times.

2. Knee to Chest - Leg Straight

Glutes, Low Back, Hamstrings, Quadriceps

- Lay flat on back with knees bent.
- Grab under right thigh and straighten right leg. Do not lock knee.
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Repeat with other leg.
- Repeat sequence 2 or 3 times.

3. Knee to Chest - Diagonal

Glutes, Low Back, Hamstrings, Quadriceps, Piriformis

- Lay flat on back with knees bent.
- Grab under right thigh and pull right knee toward left chest until you feel mild tension.
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Repeat with other leg.
- Repeat sequence 2 or 3 times.

4. Leg Cross

Piriformis, Glutes, Low Back

- Lay flat on back with knees bent.
- Place your right outer ankle on the top of right left thigh.
- Grab under left thigh and pull left knee toward chest until you feel mild tension.
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Repeat with other leg.
- Repeat sequence 2 or 3 times

5. Side Quadricep Stretch

Quadriceps, Hip Flexors, Abdominals

- Lay on left side.
- Grab right shin, just above your right ankle.
- Slowly pull right foot toward right buttock while pushing right hip forward.
- At the same time, push right hip forward.
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Repeat with other leg.
- Repeat sequence 2 or 3 times.

6. Butterfly Stretch

Groin, Low Back

- Sit upright with the bottoms of feet touching each other.
- Bend forward at the waist to a position where you feel mild tension.
- Elbows can be used to push down on thighs if you want more stretch.
- Hold for 10 seconds, then pull slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Repeat sequence 2 or 3 times.

7. Straddle Stretch

Groin, Hamstrings, Low Back

- Sit upright with legs straight.
- Spread legs as far as you can comfortably can.
- Keeping legs straight, but not locking knees, bend forward at the waist.
- Hold for 10 seconds then push down slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Return to starting position.
- Repeat sequence, but this time take chest toward left knee.
- Return to the starting position and repeat sequence toward right knee.
- Repeat entire sequence 2 or 3 times.

8. Cross Over Stretch

Glutes, Iliotibial Band

- Sit with legs straight in front of you.
- Bend right leg and cross it over so you can grab around the outside of right thigh.
- Slowly pull bent right leg toward chest until you feel mild tension.
- Hold for 10 seconds then push slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Return to starting position and switch legs.
- Repeat sequence on opposite leg.
- Repeat sequence 2 or 3 times.

9. Calf Stretch

Calves

- Squat down on ground with right foot slightly in front of left.
- Grasp right shin and rock forward until you feel mild tension.
- Hold for 10 seconds, then push slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Repeat sequence on opposite leg.
- Repeat sequence 2 or 3 times.

10. Upper Back Stretch

Upper back, Posterior Deltoids

- Sit with legs straight in front.
- Twist your upper back crossing left arm across chest and place right hand on the floor.
- Slowly twist until you feel mild tension.
- Hold for 10 seconds, then twist slightly farther until you feel slightly more tension.
- Hold this position for 10 seconds.
- Return to starting position and twist to the left side.
- Repeat sequence 2 or 3 times.

11. Chest Stretch

Chest, Shoulders, Biceps

- Stand with right shoulder against a wall.
- Place right palm on the wall.
- Slowly turn your body away from the wall until you feel mild tension.
- Hold for 10 seconds, then twist slightly farther until you feel slightly more tension.
- Return to starting position and repeat sequence with left arm.
- Repeat sequence 2 or 3 times.

12. Triceps Stretch

Triceps, Posterior Deltoids

- Stand upright and extend right arm over head.
- Grab right elbow with left hand and place right hand on right shoulder blade.
- Slowly push right elbow backward until mild tension is felt.
- Hold for ten seconds, then push slightly farther until you feel slightly more tension.
- Return to starting position and repeat sequence with left arm.
- Repeat sequence 2 or 3 times.

13. Forearm Stretch

Forearms

- Stand upright and grab right fingers with left hand.
- Slowly fold right wrist backwards until mild tension is felt.
- Hold for ten seconds, then push slightly farther until you feel slightly more tension.
- Repeat sequence, this time folding wrist forwards.
- Return to starting position and repeat sequence with left arm.
- Repeat entire sequence 2 or 3 times.

General Principles of Exercise

To maximize the results from your training program, several exercise principles should be understood.

Adaptation

Adaptation means that the body can adjust to any overload as long as it is done in small increments. The amount of progress the body can make depends on adequate rest, consistency of workouts, adequate nutrition, and genetic makeup.

Overload

Overload, in exercise training programs, means that a training program causes the body to adapt only when the demands are greater than what the body is accustomed to doing. This does not mean that the overload is greater than your maximum, rather overload is generally greater than 75% of your maximal effort.

Progression

The principle of progression states that as the body adapts to the exercise program you must gradually increase the overload to continue to adapt. It is critical that all progressions are gradual and small in nature to prevent over loading the body's ability to recover.

Specificity

Specificity of training is the principle that your body will adapt to whatever exercises you perform. This means that if you only perform bench presses, your body will not adapt to sit-ups. It may, therefore, be beneficial for you to alter your training to prepare for the Candidate Physical Ability Test.

Over-Training

Over-training addresses the body's need for adequate rest and nutrition following exercise to recuperate before the next exercise session. If recuperation is not adequate, over-training will occur. Signs of over training include: increased injury rate, increased resting heart rate, muscle soreness that does not subside after 48 hours, apathy, insomnia, loss of appetite, lack of adaptation to exercise, and loss of strength. Over-training must be avoided.

Balance

When developing a strength training program, it is important to balance muscle development by including exercises that train all major muscles groups of the body. This means that if the chest is trained so must the back; similarly if the upper body is trained so must the legs. When this principle is not followed, joints become imbalanced, and injuries occur.

Cardiopulmonary Endurance Program

Cardiopulmonary endurance is the ability of the cardiovascular and respiratory systems to deliver oxygen to working muscles. It consists of both aerobic and anaerobic energy systems.

Aerobic Fitness

During aerobic activities, the intensity of the exercise is low enough for the cardiopulmonary system to meet the oxygen demands of the working muscles. Aerobic activities include bicycling, hiking, swimming, climbing stairs, and running when performed at a low enough intensity.

Anaerobic Fitness

During anaerobic activities, the intensity of exercise is so high that the working muscle's demands for oxygen exceed the cardiopulmonary system's ability to deliver it. Because adequate oxygen is not available, waste products accumulate. This type of intense activity can only be short in duration. An example of an anaerobic activity is sprinting.

The CPAT Training Program

The CPAT Training program consists of two training programs. The first program is the aerobic training program and the interval program. Both of these programs complement each other and improve your aerobic and anaerobic fitness specific to the Candidate Physical Ability Test.

Aerobic Training

The cardiopulmonary endurance program should begin at a level that is considered "moderately difficult" but not "difficult." Your intensity should not be so high that you cannot speak during the exercise. The program below consists of a series of progressive levels. As you adapt to each step, you should move up to the next level. This program should be done 3 to 5 days per week.

Interval Training

Interval training involves a repeated series of exercise activities interspersed with rest or relief periods. This is an excellent tool for improving both aerobic and anaerobic endurance. In this program running intervals are performed on Tuesdays and Thursdays. It is important that interval days have at least one day of slow easy running between them. This provides the recovery necessary to prevent over training.

Phase One

	Monday	Tuesday	Wednesday	Thursday	Friday
Level 1	Run 1 mile at an easy pace being sure to be able to talk the entire time.	Run 30 seconds @ somewhat hard pace then walk for 30 seconds. Repeat this for a total of 1 mile.	Run 1 mile at an easy pace being sure to be able to talk the entire time.	Run 30 seconds @ somewhat hard pace then walk for 30 seconds. Repeat this for a total of 1 mile.	Run 1 mile at an easy pace being sure to be able to talk the entire time.
Level 2	Run 1.5 miles at an easy pace being sure to be able to talk the entire time.	Run 30 seconds @ somewhat hard pace then walk for 30 seconds. Repeat this for a total of 1.5 miles.	Run 1.5 miles at an easy pace being sure to be able to talk the entire time.	Run 30 seconds @ somewhat hard pace then walk for 30 seconds. Repeat this for a total of 1.5 miles.	Run 1.5 miles at an easy pace being sure to be able to talk the entire time.
Level 3	Run 2 miles at an easy pace being sure to be able to talk the entire time.	Run 60 seconds @ somewhat hard pace then walk for 60 seconds. Repeat this for a total of 2 miles.	Run 2 miles at an easy pace being sure to be able to talk the entire time.	Run 60 seconds @ somewhat hard pace then walk for 60 seconds. Repeat this for a total of 2 miles.	Run 2 miles at an easy pace being sure to be able to talk the entire time.
Level 4	Run 2.5 miles at an easy pace being sure to be able to talk the entire time.	Run 60 seconds @ somewhat hard pace then walk for60 seconds. Repeat this for a total of 2.5 miles.	Run 2.5 miles at an easy pace being sure to be able to talk the entire time.	Run 60 seconds @ somewhat hard pace then walk for 60 seconds. Repeat this for a total of 2.5 miles.	Run 2.5 miles at an easy pace being sure to be able to talk the entire time.
Level 5	Run 3 miles at an easy pace being sure to be able to talk the entire time.	Run 90 seconds @ somewhat hard pace then walk for 90 seconds. Repeat this for a total of 3 miles.	Run 3 miles at an easy pace being sure to be able to talk the entire time.	Run 90 seconds @ somewhat hard pace then walk for 90 seconds. Repeat this for a total of 3 miles.	Run 3 miles at an easy pace being sure to be able to talk the entire time.

Phase Two

	Monday	Tuesday	Wednesday	Thursday	Friday
Level 6	Run 3 miles at an easy pace being sure to be able to talk the entire time.	Run @ easy pace for 3 minutes then run stairs moderately hard for 1 minute	Run 1.5 miles easy pace	Run @ easy pace for 3 minutes then run stairs moderately hard for 1 minute.	Run 3 miles at an easy pace being sure to be able to talk the entire time.
Level 7	Run 3 miles at an easy pace being sure to be able to talk the entire time.	Run @ easy pace for 3 minutes then run stairs moderately hard for 90 seconds	Run 1.5 miles easy pace	Run @ easy pace for 3 minutes then run stairs moderately hard for 90 seconds	Run 3 miles at an easy pace being sure to be able to talk the entire time.
Level 8	Run 3 miles at an easy pace being sure to be able to talk the entire time.	Run @ easy pace for 3 minutes then run stairs moderately hard for 2 minutes	Run 1.5 miles easy pace	Run @ easy pace for 3 minutes then run stairs moderately hard for 2 minutes	Run 3 miles at an easy pace being sure to be able to talk the entire time.
Level 9	Run 3 miles at an easy pace being sure to be able to talk the entire time.	Run @ easy pace for 3 minutes then run stairs moderately hard for 2 minutes and 30 seconds.	Run 1.5 miles easy pace	Run @ easy pace for 3 minutes then run stairs moderately hard for 2 minutes and 30 seconds.	Run 3 miles at an easy pace being sure to be able to talk the entire time.
Level 10	Run 3 miles at an easy pace being sure to be able to talk the entire time.	Run @ easy pace for 3 minutes then run stairs moderately hard for 3 minutes	Run 1.5 miles easy pace	Run @ easy pace for 3 minutes then run stairs moderately hard for 3 minutes	Run 3 miles at an easy pace being sure to be able to talk the entire time.

Muscular Strength/Endurance Program

This is a resistance program designed to improve your total body strength and endurance. This is not a bodybuilding or a power-lifting program. It is designed to prepare you specifically for the Candidate Physical Ability Test. If you are not familiar with lifting programs, have any joint pain or feel uncomfortable performing these exercises, you should seek the advice of a professional trainer.

This program is designed to be performed three days a week. This means that you will not be lifting 4 days a week. These rest days are just as important as your workout days. A critical mistake made by some applicants is over training when preparing for the Candidate Physical Ability Test. If you feel you are over training, refer back to the exercise principles, slow down your progression, reduce your overload, and allow for adequate rest between workouts.

This workout should follow the previously mentioned warm-up and stretching program. This program is designed to be a circuit workout. Circuit training has been proven to be a very effective and efficient way to improve muscular strength, muscular endurance and cardiovascular endurance. Once you begin this workout, you will lift at each station for 10 repetitions and then move on to the next exercise. Rest between exercises should not exceed 30 seconds unless you are experiencing some discomfort. For safety purposes, it is recommended that you lift with a partner and spot each other when necessary.

General Safety Tips While Performing Resistance Training

- **Always lift with a partner.**
- **Ask for help from an expert if you don't know what you are doing.**
- **Progress slowly to avoid injuries.**
- **Never show off by attempting to lift more weight than you normally lift.**
- **Use proper lifting technique when lifting weight plates and dumbbells.**
- **Never drink alcohol or take medications that may cause drowsiness prior to lifting weights.**

- **Do not lift too quickly, always control the weights.**
- **Always use strict form. Proper technique is more important than the amount of weight lifted.**
- **Keep head in a neutral position, looking straight ahead and not upwards or downwards.**

Progression

Unless you are an experienced weightlifter, it is recommended that you begin by doing one complete cycle through this circuit. After the first week, if you are not still getting muscle soreness 24 to 48 hours after your workouts, you can progress to two cycles through the circuit. After the second week, if you are not still getting muscle soreness 24 to 48 hours after your workouts, you can progress to three cycles through the circuit. Although it is not critical, it is recommended that you follow the exercises in order. If, after progressing to the next level, you feel very sore, you many want to decrease the weights and the number of times you complete the circuit.

Weight Training Circuit Workout

1. Seated Leg Press

Quadriceps, Hamstrings, Glutes, Calves

CPAT Events: Stair Climb, Hose Drag, Ladder Raise, Forcible Entry, Rescue, Ceiling Breach and Pull

Set appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Place feet flat on push platform about shoulder width apart and toes pointed slightly outward.
- Adjust seat so knees are flexed at 90 degrees.
- Push weight up while exhaling.
- Stop just short of locking your knees.
- Keep knees in alignment with feet.
- Keep head in neutral position.

2. DB Military Press

Deltoids, Triceps, Trapezius

CPAT Events: Ladder Raise, Search, Ceiling Breach and Pull

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Raise two dumbbells to height of shoulders.
- With palms facing forward, alternate pressing each dumbbell upward toward the ceiling, one at a time.
- Exhale while lifting.
- Keep head in neutral position.
- Using slight leg push is acceptable.
- Repeat with other arm.

3. Lat Pull Down

Latissimusdorsi, Rhomboids, Posterior Deltoids, Biceps

CPAT Events: Hose Drag, Ladder Extension Forcible Entry, Rescue, Ceiling Breach and Pull

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Adjust seat and leg hold to allow full range of motion.
- Hold bar in chin up grip with hands close together and palms toward face.
- Pull bar straight down to just below the chin.
- Exhale while pulling weight down.
- Return to starting position.

4. DB Split-Squats

Glutes, Quadriceps, Hamstrings, Calves

CPAT Events: Stair Climb, Hose Drag, Ladder Raise, Forcible Entry, Search, Rescue Ceiling Pull and Breach

Pick a light weight (many people can start with no weights at all). Do not start with more than 10 lbs.

- Stand with feet together than step backward with one foot about 26".
- Keep back straight and arms down at side with head neutral, slowly bend both legs.
- Lower yourself slowly until your left knee barely touches the floor.
- Forward leg should remain vertical throughout motion with knee directly over ankle. If knee tends to move forward over the toes, adjust back foot further backward.
- Return to the starting position.
- Inhale while lowering and exhale while pushing back up into upright position.
- Repeat with opposite leg.

5. Bench Press

Pectorals, Deltoids, Triceps

CPAT Events: Ladder Raise, Forcible Entry, Search, Ceiling Breach and Pull

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Lie on bench, feet flat on floor.
- Hold bar with arms shoulder width apart or slightly wider.
- Lower bar to middle of chest.
- Push bar up to starting position.
- Inhale while lowering and exhale while pushing back up.

6. DB Row

Latisimussdorsi, Rhomboids, Posterior Deltoids, Trapezius, Biceps

CPAT Events: Hose Pull, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach and Pull

- Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.
- Standing to right of bench, place left knee on bench and support upper body with left (non-lifting) arm.
- Keep head in neutral position.
- Pull DB from ground into waist area with right arm.
- Lower DB back to starting position.
- Avoid twisting at waist.
- Inhale while lowering weight and exhale while lifting weight.
- Repeat sequence on opposite side.

7. Leg Extension

Quadriceps

CPAT Events: Stair Climb, Hose Pull, Ladder Raise, Forcible Entry, Search, Rescue

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Adjust machine so that backs of knees are against pad and back pad is supporting lower back.
- Extend knees stopping just before the knees lock.
- Slowly lower weight to starting position.
- Exhale while pushing weight and inhale while lowering weight.

Note: This exercise should not be performed by individuals who have undergone reconstructive knee surgery.

8. Leg Curl

Hamstrings

CPAT Events: Stair Climb, Hose Pull, Ladder Raise, Forcible Entry, Rescue

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Lie flat on machine with top of knees just off the pad and ankle roller situated above the heels.
- Flex the knee until ankle roller reaches the buttocks. Keep hips down and stomach in contact with pad throughout the motion.
- Slowly lower weight to starting position.
- Inhale while pulling weight up and exhale while lowering weight down.

9. DB Curl

Biceps, Forearms

CPAT Events: Hose Drag, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach and Pull

Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.

- Stand up with knees slightly bent.
- Begin with arms down at sides.
- Bend right elbow bringing the dumbbell toward right shoulder.
- Slowly lower dumbbell to starting position.
- Exhale while raising weight and inhale while lowering weight.
- Repeat sequence on opposite side.

10. Tricep Extension

Triceps

CPAT Events: Ladder Raise, Forcible Entry, Search, Ceiling Breach and Pull

- Pick appropriate weight to overload above muscles but not so heavy as to cause injury or failure.
- Stand up with knees slightly bent.
- Place hands on bar about 6" apart.
- Keeping upper arms at sides, extend the elbows until arms are almost straight and bar is at mid-thigh.
- Slowly return bar to an elbow flexed position at mid-chest level. Upper arms should remain in contact with sides. Do not allow elbows to move forward, away from body.
- Exhale while pushing bar down and inhale while returning bar back up.

11. Abdominal Curls

Abdominal Muscles

CPAT Events: All Events

- Sit on ground with knees bent at 90 degrees.
- Keeping feet flat on floor and hands at your side, slowly curl your torso so chin approaches your chest.
- Do not raise torso to more than a 45-degree angle off the floor.
- Slowly return to slightly above your starting position, keeping tension on abdominal muscles at all times.
- Exhale while curling up and inhale while lowering torso back down.

12. Swimmers

Erector Spinae (Lower back), Glutes

CPAT Events: All Events

- Lie face down on ground with feet together.
- Place arms straight out in front.
- Move the right arm and left leg up at the same time.
- As you return the right arm and left leg, move the left arm and right leg up at the same time.
- Continue alternating in a moderate cadence.

13. Wrist Rollers

Forearm muscles

CPAT Events: Hose Drag, Equipment Carry, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach and Pull

- Stand erect
- Set machine to "somewhat difficult" resistance
- Grab machine with both palms facing the floor
- Alternately roll each wrist towards the ceiling
- Repeat with palms upward when done

14. Hand Grippers

Forearm muscles

CPAT Events: Hose Drag, Equipment Carry, Ladder Extension Forcible Entry, Rescue, Ceiling Breach and Pull

- Stand erect
- Set machine to "somewhat difficult" resistance
- Grab machine with both hands
- Alternately close grip to squeeze machine

Exercises without Weights

Although it is easier to improve muscular strength and endurance with weight equipment, it is also possible to accomplish this with some simple exercises. These exercises require minimum equipment and can be done almost anywhere. Perform these exercises in a circuit. Move from one exercise to the next with minimal rest. Initially, work in the somewhat hard range. This means do not exercise to failure. Start by going through the circuit one time and then gradually progress until you can complete this circuit three times in a row.

Calisthenics Circuit Workout

1. Chair Squats

Glutes, Quadriceps, Hamstrings

CPAT Events: Stair Climb, Hose Drag, Ladder Raise, Forcible Entry, Search, Rescue Ceiling Pull and Breach

Stand in front of a sturdy and stable chair with legs shoulder width apart and toes pointing slightly outward.

- Hold arms out straight in front of you.
- Slowly lower your buttocks into the chair.
- As soon as you feel the slightest contact with the chair, slowly stand back up to the starting position.
- Keep your head in a neutral position.
- Inhale while lowering yourself and exhale while standing up.

2. Push Ups

Pectorals, Deltoids, Triceps, Abdominals, Low Back)

CPAT Events: Ladder Raise, Forcible Entry, Search, Ceiling Breach and Pull

Place hands on ground shoulder width apart or slightly more. Keep feet together and back straight throughout the exercise.

- Lower the body until the upper arms are at least parallel to the ground.
- Push yourself up to the initial position by completely straightening arms.
- Inhale while lowering and exhale while pushing.

3. Split-Squats

Glutes, Quadriceps, Hamstrings, Calves

CPAT Events: Stair Climb, Hose Drag, Ladder Raise, Forcible Entry, Search, Rescue, Ceiling Pull and Breach

Stand with feet together then step backward with foot about 26″ behind left foot.

- Keep back straight and arms down at side with head neutral, slowly lower right knee straight down onto the floor.
- Inhale while lowering and exhale while pushing back up into upright position.
- Forward leg should remain vertical throughout motion, with knee directly over ankle. If knee tends to move forward over the toes, adjust back foot further backward.
- Repeat with other leg.

4. Chin Ups

Latissimusdoris, Rhomboids, Posterior Delts, Biceps

CPAT Events: Hose Drag, Ladder Extension, Forcible Entry, Rescue, Ceiling Pull and Breach

- Grasp horizontal bar with palms facing you and hands 6” apart.
- Hang from bar with arms fully extended.
- Pull yourself upward until your chin is above the bar.
- Do not kick or swing your legs.
- Return to the starting position.
- Inhale while lowering yourself and exhale while pulling yourself up.
- If unable to complete 3 chin ups, elevate yourself to the bar with a stool or a partner, and slowly lower yourself down in a slow and controlled fashion.

5. Bench Steps

Glutes, Quadriceps, Hamstrings, Calves

CPAT Events: Stair Climb, Hose Drag, Ladder Raise, Forcible Entry, Search, Rescue, Ceiling Pull and Breach

This requires good balance, so initially set the step next to a wall or use a partner for safety.

- Use a step or bench 6" to 18" high.
- Place right foot flat on the bench with the left foot flat on the floor.
- Push down with the foot on the bench and step up until both legs are straight.
- Slowly lower yourself back down to the starting position.
- Exhale while pushing up and inhale while lowering down.
- Repeat entire sequence with other leg.
- Start with a smaller step and progressively increase the height. Do not exceed 18" high.

6. Dips

Pectorals, Deltoids, Triceps

CPAT Events: Ladder Raise, Forcible Entry, Search, Ceiling Pull and Breach

- Place hands behind you on dip bar or chair with feet straight in front.
- Bend arms and lower body in a controlled manner until the upper arms are parallel with the floor.
- Straighten the arms to return to the starting position.
- Legs can be bent to keep feet from touching the floor.
- If unable to perform 3 dips, use a stool or a partner to help you up and then lower yourself down slowly.
- Inhale while lowering yourself and exhale while pushing up.

7. Squat Thrusts

Pectorals, Deltoids, Triceps, Abdominals, Glutes, Quadriceps

CPAT Events: Stair Climb, Hose Pull, Ladder Raise, Forcible Entry, Search

- Stand erect with feet together.
- Quickly bend knees until palms touch the floor just slightly in front of you.
- Supporting weight with arms, tighten your abdominal muscles, and throw your feet backwards until you are in the push up starting position.
- Reverse sequence until you are back at the starting position. This is one repetition.
- Inhale and exhale evenly throughout the exercise

8. Abdominal Curls

Abdominal Muscles

CPAT Events: All Events

- Sit on ground with knees bent at 90 degrees.
- Keeping feet flat on floor and hands at side, slowly curl torso so chin approaches your chest.
- Do not raise torso to more than a 45-degree angle off the floor.
- Slowly return to slightly above your starting position, keeping tension on abdominal muscles at all times.
- Exhale while curling up and inhale while lowering torso back down.

9. Swimmers

Erector Spinae (Lower back), Glutes

CPAT Events: All Events

- Lie face down on ground with feet together.
- Place arms straight out in front of you.
- Move the right arm and left leg up at the same time.
- As you return the right arm and left leg, move the left arm and right leg up at the same time.
- Continue alternating in a moderate cadence.

10. Hand Grippers

Forearm muscles

CPAT Events: Hose Drag, Equipment Carry, Ladder Extension, Forcible Entry, Rescue, Ceiling Breach and Pull

- Stand erect
- Place tennis ball in palm of hand
- Slowly squeeze hand compressing tennis ball
- Repeat with other hand

Supplemental Task-Specific Exercise Training

Introduction

The supplementary exercise program presented in the following sections not only makes use of the overload principal of training but also applies the all-important principal of training specificity. Exercise training specificity means that performance improvements occur most readily when training closely resembles the specific physical activity for which improved performance is desired. When training for specific activities requiring high levels of muscular strength and muscular power (e.g. hose drag and pull from kneeling position, ladder raise and extension, sledge hammer swing, dummy drag, and ceiling breach and pull) task-specific muscular overload should accompany a general strength training program. Practice and training in the specific activity becomes crucial because much of the improvement in muscular strength/power performance depends upon skill learning and new muscular adaptations (i.e., coordination of specific muscle actions) required for the physical task. In most instances, training in the actual task proves most effective.

The following program provides examples for applying your general training program to actually performing CPAT tasks. As with your other preparation training, you must progressively upgrade the duration, frequency, and intensity of exercise to continually improve your performance. This will maximize your improvement in performing the CPAT.

In the beginning phase of this training, progress slowly so that you can safely learn the skill and coordination required for the movements. As you become confident in your ability to successfully complete a specific exercise task with relative ease, redirect your training energies to those activities that pose the greatest difficulty. For many people, the stair climb with full weights, forcible entry, and rescue prove the most difficult.

Stair Climb

Exercise

You can readily modify aerobic training to more closely resemble the 3-minute stair climb in the CPAT by performing actual stair-stepping exercise on any conveniently located first step of a staircase, preferably at least 8 inches in height. Step at a rate that permits completion of 24 complete stepping cycles within a one-minute period. A stepping cycle consists of stepping up with one foot, then the other and down with one foot, then the other in a rhythm "up-up, down-down." Strive to complete two stepping cycles within a 5-second period.

Progression

Begin training by stepping continuously (unweighted) for 5 minutes. As your fitness improves, complete a second and then third 5 minute exercise bout interspersed with several minutes of recovery. Once you can complete three intervals of 5-minutes of stepping, add weight to your torso in the form of a knapsack to which weights, sand, dirt or rocks has been added. Continue to perform three 5-minute intervals of stepping; progressively add weight to the knapsack as your fitness improves so that you can step with 50 pounds of additional weight. (This 50-pound knapsack and work gloves should be worn in training for all subsequent events of the CPAT.) In addition, carry 10-15 pounds (dumbbell, sand filled plastic container) in each hand while stepping. The total weight carried (knapsack plus hand-held weights) should equal approximately 75 pounds. At this stage, reduce the duration of the exercise interval to 3 minutes. This task-specific training not only improves aerobic fitness for continuous stepping but it also improves your leg power for stepping in the weighted condition, which represents a unique component of this CPAT item.

Hose Drag

Exercise

Attach 50 feet of rope to a duffel bag to which weight has been added. Tires or cement blocks can also be used for resistance. Choose an initial resistance that enables you to perform 8 to 10 repetitions (2-minute recovery between repetitions) of the exercise sequence. This generally represents an effort that you would rate as feeling "somewhat hard."

Progression

Progressively increase the resistance to 60 to 80 pounds as fitness improves. Place the rope over your shoulder and drag the resistance a distance of 75 feet. (You should run during this phase of the event.) Immediately drop to one knee and steadily and briskly pull the rope hand-over-hand to bring the resistance into your body. A parking lot, school yard, driveway, or sidewalk can be used for training on this event.

Equipment Carry

Exercise

Use two dumbbells or plastic containers filled with sand so that each weighs approximately 30 pounds. Place the weights on a shelf four feet above ground level. Remove the weights, one at a time, and place them on the ground. Then pick up the weights and carry them a distance of 40 feet out and 40 feet back and replace them on the shelf.

Progression

If the initial weight feels too heavy, choose a lighter weight for your initial practice. Continue to practice this test item until it can be performed with 30 pounds with relative ease.

Ladder Rise and Extension

Exercise

Ladder Rise. The ideal training for this task requires an actual 12-foot aluminum extension ladder. If this size ladder is unavailable, you can use a single ladder or smaller extension ladder to practice the skill required raising the ladder. Practice of the ladder raise sequence requires the assistance of two adults to "foot" the ladder at its base to prevent it form sliding forward and/or falling during the raise. In practicing this component (as described in the test directions) it is important to initially move slowly so as to develop the skill and confidence to safely complete the required movements. Be sure to use each rung when raising the ladder to develop the coordination and timing necessary on the CPAT.

Exercise

Ladder Extension. Task-specific training of the muscles required in the ladder extension can be provided by attaching a rope to a weighted duffel bag or knapsack. Place the rope over a tree branch (or horizontal bar support above a row of playground swings) eight to ten feet above the ground. With hand-over-hand movements steadily raise the bag to the top of the branch or bar and then slowly lower it to the ground.

Progression

Start with a weight that you would rate as feeling "somewhat hard," and perform eight to ten repetitions of the movement. Rest two minutes and repeat the exercise-rest sequence two more times. As your strength improves progressively add more resistance until you can exercise with 40 to 50 pounds of weight.

Forcible Entry

Exercise

Borrow or purchase a ten-pound sledgehammer. Wrap padding around a large tree or vertical pole at a level of 39 inches above the ground with a circular target in the center. Stand sideways and swing the sledgehammer in a level manner so the head strikes the center of the target area. Focus on using your legs and hips to initiate the swinging motion.

Progression

The initial phase of this task-specific training should focus on learning the coordinated movement of your arms and legs to accurately hit the target. Repeat the swing 15 times and rest for two minutes. Repeat this exercise-rest sequence twice again. Strive to increase the velocity (power) of each swing without sacrificing accuracy as your comfort level and skill on this test item improve.

Search

Exercise

Practice crawling on hands and knees (wearing sweat pants and/or kneepads) at least 70 feet while making

several right angle turns during the crawl. For the major portion of the crawl keep low enough so as not to contact an object three feet above the ground. Periodically, drop your stomach and crawl ten feet along the ground.

Progression

Once you are comfortable crawling as above repeat the sequence with a knapsack on. Gradually increase the weight within the knapsack until it equals 50 pounds.

Rescue

Exercise

Attach a short handle to a duffel bag to which rocks, sand, or other appropriate weight can be progressively added. Start with a weight that feels "somewhat heavy." You can grasp the handle with (a) one hand and drag the "victim" in a cross-over, side-stepping manner, or (b) two hands while facing the "victim" and moving directly backwards while taking short, rapid stagger steps. Drag the weight 35 to 50 feet in one direction turn around and drag it back to the starting point. Complete eight to ten repetitions of this task with a two-minute rest interval between each trial.

Progression

Gradually increase the resistance until you can successfully complete 4 repetitions (with rest interval) with 165 pounds.

Ceiling Breach and Pull

Exercise

Ceiling Breach. Tie a rope to a dumbbell or weighted knapsack placed between your legs, shoulder width apart. Grasp the rope, arms slightly away from the body with one hand at upper-thigh level and the other hand at chest level. Lift upwards and out from the body in an action that simulates thrusting a pole through an overhead ceiling. Use a resistance that feels "somewhat hard," yet enables you to complete three sets of eight repetitions with two-minutes of rest between sets.

Progression

Continually add weight as strength improves. Practice coordinating upward arm movements with an upward extension of the legs to provide a more powerful thrusting action.

Exercise

Ceiling Pull. The training set-up for this simulation is the same as that used in training for the ladder extension. However, unlike the hand-over-hand movement that is required for the ladder extension the ceiling pull requires exerting power in single, repeated downward thrusts. Grasp the rope attached to the weighted knapsack or duffel bag with hands spaced about one-foot apart and the bottom hand at chin level. In a powerful movement simultaneously pull arms down and lower your body to raise weight several feet above the ground. Repeat eight to ten consecutive repetitions of the movement with a resistance that feels "somewhat hard." Complete three sets with a two-minute recovery interval interspersed.

Progression

Progressively add resistance as fitness improves.

As your fitness improves you should begin to link the various test components. For example, immediately upon finishing the stair climb move directly to the hose drag and then to the equipment carry. Eventually you will be able to simulate all of the task components in the CPAT in a continuous exercise sequence.

IAFF/IAFC Candidate Physical Ability Test

Preparation Guide

Strength Training Log

[No Weights]

Name _____

	Exercise	Date														
1	Chair Squats	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps	20													
2	Push Ups	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps														
3	Split Squads	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps	10													
4	Chin Ups	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps														
5	Bench Steps	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps	10													
6	Dips	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps														
7	Squat Thrusts	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps	10													
8	Abdominal Curls	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps	20													
9	Swimmers	weight	X	X	X	X	X	X	X	X	X	X	X	X	X	X
		reps	15													
10	Hand Grippers	weight	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball	Tennis Ball
		reps	15													

IAFF/IAFC Candidate Physical Ability Test
Preparation Guide

Strength Training Log

Name _____

	Exercise	Date													
1	Seated Leg Press	weight													
		reps	20												
2	DB Military Press	weight													
		reps	10												
3	Lat Pulldown Front	weight													
		reps	10												
4	DB Single Leg Squat	weight													
		reps	10												
5	Bench Press	weight													
		reps	10												
6	Seated Row	weight													
		reps	10												
7	Leg Extension	weight													
		reps	10												
8	Leg Curl	weight													
		reps	10												
9	DB Bicep Curl	weight													
		reps	10												
10	Tricep Extensions	weight													
		reps	10												
11	Abdominal Curls	weight													
		reps	20												
12	Swimmers	weight													
		reps	15												
13	Wrist Rollers	weight													
		reps	10												
14	Hand Grippers	weight													
		reps	10												